



WASHINGTON'S AGRICULTURAL FRUIT CHEMICAL USAGE, 2007

NATIONAL AGRICULTURAL STATISTICS SERVICE
United States Department of Agriculture
Washington Field Office • Olympia, WA 98507
www.usda.gov/nass/



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Contact: David Knopf (360) 902-1940
nass-wa@nass.usda.gov

Apples

Seven states were surveyed for apples in 2007: California, Michigan, New York, North Carolina, Oregon, Pennsylvania, and Washington. Surveyed acreage totaled 288,000 bearing acres. Washington was the largest state surveyed for apples and accounted for 55 percent of the acreage.

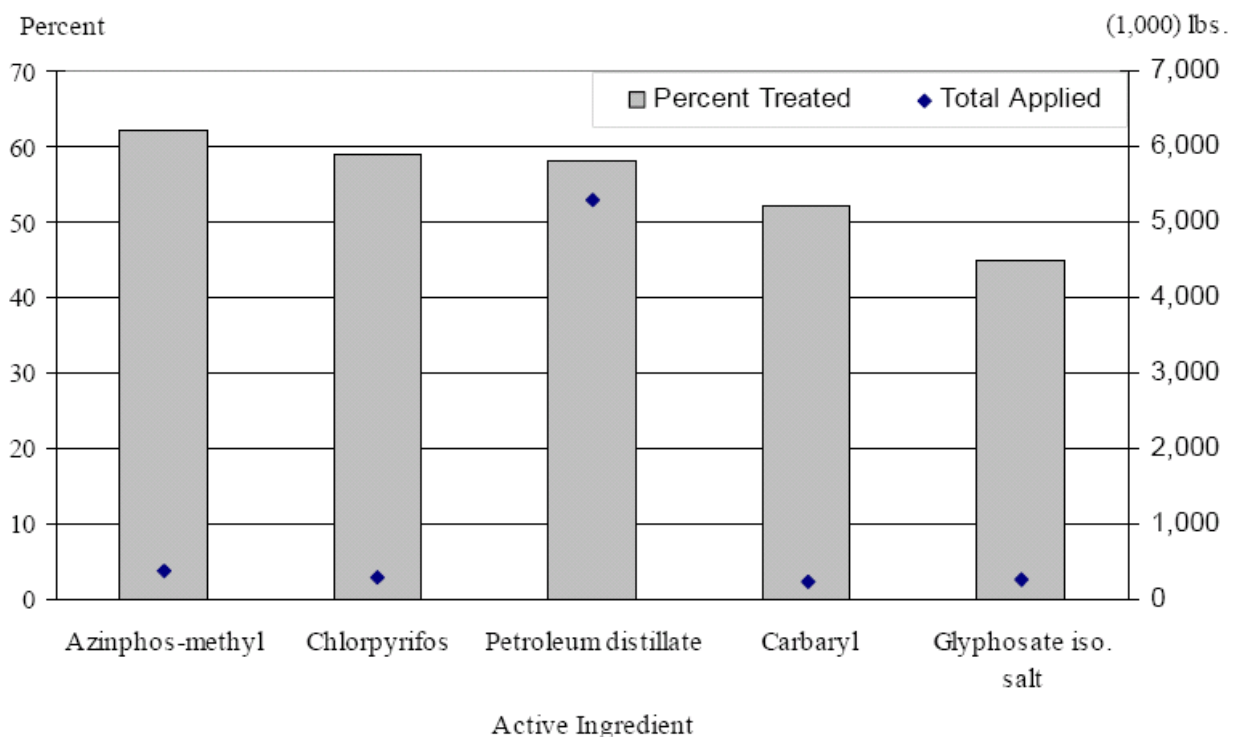
Apples: Pesticide Applications, Bearing Acreage & Percentage Receiving Applications, Program States and Total, 2005 and 2007

State	Bearing Acreage		Area Receiving ⁽¹⁾							
			Herbicide		Insecticide ⁽²⁾		Fungicide ⁽²⁾		Other Chemicals	
	2005	2007	2005	2007	2005	2007	2005	2007	2005	2007
	Acres		Percent							
California	25,000	20,500	40	35	69	74	57	67	19	29
Michigan	40,500	35,000	30	58	93	99	92	100	40	67
New York	45,000	42,000	55	73	93	100	95	100	63	49
North Carolina	6,800	6,800	11	21	93	97	93	98	16	-
Oregon	6,500	4,200	38	70	91	95	88	84	72	67
Pennsylvania	21,800	21,500	41	84	90	98	85	97	43	70
Washington	155,000	158,000	45	61	96	99	86	89	68	75
Wisconsin ⁽³⁾	5,800	-	39	-	88	-	89	-	21	-
TOTAL	306,400	288,000	43	61	92	97	86	91	56	65

⁽¹⁾ Total applied may include applications of some active ingredients made only to non-bearing acres.

⁽²⁾ Total applied excludes Bt's (*Bacillus thuringiensis*) and other biologicals. Quantities are not available because amounts of active ingredient are not comparable between products. ⁽³⁾ Wisconsin was not surveyed in 2007.

Apples-Percent of Acres Treated and Total Applied



Apples: Agricultural Chemical Applications, Washington, 2005 and 2007⁽¹⁾

Active Ingredient	Area Applied		Applications		Rate Per Application		Rate Per Crop Year		Total Applied	
	2005	2007	2005	2007	2005	2007	2005	2007	2005	2007
Herbicides:	Percent		Number		Pounds Per Acre				1,000 Lbs.	
2, 4-D, dimeth. salt	9	3	1.5	2.0	0.948	0.718	1.379	1.465	18.5	6.8
Carfentrazone-ethyl	*	-	1.2	-	0.026	-	0.032	-	(²)	-
Diuron	2	-	1.6	-	1.501	-	2.379	-	8.1	-
Glufosinate-ammonium	1	-	1.1	-	0.843	-	0.908	-	1.3	-
Glyphosate iso. salt	37	50	1.8	1.8	0.997	1.219	1.752	2.227	101.1	176.7
Norflurazon	10	8	1.6	1.4	2.078	1.573	3.267	2.239	48.2	26.7
Oryzalin	1	2	1.2	1.0	2.778	2.105	3.376	2.105	6.6	8.3
Oxyfluorfen	2	-	1.0	-	0.832	-	0.838	-	2.3	-
Paraquat	17	-	1.2	-	0.833	-	0.984	-	26.5	-
Pendimethalin	1	14	1.0	1.2	2.136	1.475	2.158	1.717	1.9	37.8
Simazine	9	9	1.4	1.5	1.297	1.143	1.776	1.698	23.9	23.0
Insecticides:										
Abamectin	2	-	1.1	-	0.013	-	0.014	-	(²)	-
Acetamiprid	41	46	1.2	1.7	0.128	0.130	0.149	0.224	9.4	16.3
Azadirachtin	2	*	1.1	2.8	0.033	0.021	0.037	0.060	0.1	(²)
Azinphos-methyl	72	66	1.8	2.4	0.965	0.959	1.752	2.268	196.4	236.3
Benzoic acid	28	17	1.2	1.1	0.233	0.239	0.277	0.271	12.1	7.1
Bifenazate	6	-	1.0	-	0.408	-	0.419	-	3.8	-
Bt subsp. kurstaki	18	12	1.3	2.0	-	-	-	-	(²)	-
Carbaryl	71	63	1.4	1.4	1.327	1.167	1.919	1.675	210.1	165.4
Chlorpyrifos	58	64	1.1	1.0	1.849	1.772	2.084	1.835	186.7	186.8
Clofentezine	10	-	1.0	-	0.173	-	0.179	-	2.7	-
Cyd-X Granulo. Virus (³)	9	13	1.5	2.8	-	-	-	-	-	-
Diazinon	5	9	1.0	1.1	1.577	2.220	1.636	2.430	13.3	33.4
Emamectin benzoate	-	18	-	1.1	-	0.013	-	0.014	-	0.4
Endosulfan	10	8	1.1	1.2	1.753	1.810	1.917	2.093	30.8	26.4
Etoxazole	1	-	1.0	-	0.084	-	0.087	-	0.2	-
Fenbutatin-oxide	1	-	1.1	-	0.665	-	0.722	-	1.4	-
Fenpropathrin	*	-	1.5	-	0.357	-	0.525	-	0.3	-
Fenpyroximate	3	-	1.0	-	0.072	-	0.075	-	0.4	-
Formetanate hydro.	13	-	1.1	-	0.722	-	0.772	-	15.6	-
Hexythiazox	4	-	1.0	-	0.147	-	0.148	-	1.0	0.9
Imidacloprid	36	27	1.4	1.5	0.059	0.110	0.081	0.165	4.6	6.9
Kaolin	10	3	1.3	2.1	32.032	86.711	40.430	77.137	597.2	382.9
Lambda-cyhalothrin	3	6	1.7	1.3	0.039	0.035	0.067	0.045	0.4	0.4
Novaluron	12	15	1.2	1.3	0.176	0.200	0.211	0.256	4.0	5.9
Petroleum distillate	64	85	2.2	1.8	14.329	17.910	31.548	32.991	3,133.6	4,421.1
Phosmet	15	8	1.4	1.3	2.775	2.501	3.758	3.328	87.1	41.2
Potassium salts	1	-	1.2	-	7.407	-	8.801	-	10.5	-
Pyridaben	15	7	1.5	1.0	0.252	0.245	0.380	0.255	8.6	2.8
Pyriproxyfen	4	2	1.1	1.0	0.086	0.097	0.091	0.100	0.6	0.3
Spinosad	62	39	1.3	1.4	0.113	0.104	0.152	0.143	14.6	8.8
Thiacloprid	2	3	1.1	1.1	0.192	0.193	0.217	0.217	0.6	0.9
Thiamethoxam	1	-	1.0	-	0.080	-	0.083	-	0.1	-
Fungicides:										
Bacillus pumilus (³)	2	7	1.6	2.5	-	-	-	-	(²)	-
Bacillus subtilus (³)	-	1	-	1.1	-	-	-	-	-	-
Boscalid	16	19	1.0	1.4	0.013	0.014	0.013	0.020	0.3	0.6
Calcium polysulfide	33	30	1.4	1.5	17.302	16.702	24.420	24.544	1,235.8	1,148.1
Captan	1	-	1.2	-	3.605	-	4.447	-	9.8	-
Copper hydroxide	14	-	1.0	-	2.456	-	2.472	-	53.1	-
Copper oxide	*	-	2.5	-	3.577	-	8.989	-	4.4	-
Fenarimol	24	18	1.2	1.1	0.072	0.072	0.088	0.082	3.3	2.4
Fosetyl-al	4	-	1.1	-	2.421	-	2.591	-	14.5	-

See footnotes at end of table (next page).

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Apples: Agricultural Chemical Applications, Washington, 2005 and 2007⁽¹⁾ (continued)

Active Ingredient	Area Applied		Applications		Rate Per Application		Rate Per Crop Year		Total Applied	
	2005	2007	2005	2007	2005	2007	2005	2007	2005	2007
Fungicides (continued):	Percent		Number		Pounds Per Acre				1,000 Lbs.	
Kresoxim-methyl	10	3	1.1	1.2	0.143	0.152	0.153	0.181	2.3	0.8
Mancozeb	20	12	1.2	1.5	3.848	3.719	4.495	5.616	139.4	103.3
Maneb	1	-	1.1	-	3.129	-	3.531	-	7.7	-
Mefenoxam	*	-	1.0	-	0.371	-	0.378	-	0.2	-
Myclobutanil	51	40	1.3	1.3	0.119	0.141	0.156	0.177	12.5	11.3
Oxytetracycline	20	12	1.1	1.2	0.184	0.167	0.211	0.201	6.4	3.9
PCNB	1	-	1.0	-	0.057	-	0.057	-	0.1	-
Potassium bicarbon	1	2	1.1	1.1	2.282	2.398	2.432	2.741	5.6	6.8
Pseudomonas fluores.	4	-	1.2	-	0.295	-	0.356	-	2.0	-
Pyraclostrobin	16	19	1.0	1.4	0.001	0.001	0.001	0.001	(²)	(²)
Streptomycin	3	-	1.0	-	0.222	-	0.226	-	1.2	-
Sulfur	47	30	1.3	1.4	7.030	7.539	8.995	10.872	656.2	515.3
Thiophanate-methyl	8	2	1.0	1.0	0.930	0.666	0.931	0.677	11.4	2.5
Thiram	1	-	1.3	-	3.741	-	4.861	-	10.4	-
Triadimefon	4	4	1.1	1.0	0.189	0.203	0.213	0.208	1.3	1.3
Trifloxystrobin	22	12	1.2	1.2	0.065	0.074	0.077	0.081	2.6	1.6
Triflumizole	57	36	1.4	1.7	0.286	0.279	0.415	0.468	36.5	26.7
Ziram	8	5	1.1	1.0	4.754	4.899	4.993	4.951	60.4	40.5
Other Chemicals:										
Benzyladenine	31	33	1.1	1.3	0.041	0.031	0.045	0.040	2.1	2.1
Butenoic Acid Hydro.	13	21	1.0	1.0	0.084	0.061	0.087	0.001	1.8	2.0
Chlorophacinone	-	3	-	1.2	-	0.001	-	0.001	-	(²)
Cytokinins	3	2	1.4	1.6	(⁴)	(⁴)	(⁴)	(⁴)	(²)	(²)
Dodecadien-1-ol	4	*	1.3	1.0	0.199	0.031	0.264	0.031	1.8	(²)
Dodecanol	1	*	1.2	1.0	0.019	0.007	0.022	0.007	(²)	(²)
Ethephon	39	19	1.2	1.2	0.595	0.559	0.719	0.682	43.2	20.3
Gibberellic acid	2	4	1.1	1.9	0.023	0.023	0.026	0.049	0.1	0.3
Gibberellins A4A7	24	30	1.1	1.0	0.028	0.024	0.031	0.024	1.1	1.1
Mineral oil	-	2	-	2.1	-	19.794	-	40.951	-	113.0
NAA	28	20	1.2	1.7	0.038	0.020	0.045	0.033	2.0	1.0
NAA, Potassium salt	19	6	1.1	1.3	0.024	0.040	0.027	0.050	0.8	0.5
NAD	13	7	1.1	1.0	0.048	0.059	0.050	0.059	1.0	0.7
Octadecadien (E,Z)	11	-	1.0	-	0.111	-	0.116	-	2.1	-
Octadecadien (Z,Z)	11	-	1.0	-	1.553	-	1.624	-	28.8	-
Prohexadione calcium	25	5	1.2	2.5	0.240	0.256	0.288	0.628	11.0	5.2
Spiroceflin	-	3	-	1.0	-	0.265	-	0.265	-	1.2
Tetradecanol	1	*	1.2	1.0	0.004	0.001	0.005	0.001	(²)	(²)
Zinc phosphide	3	-	1.8	-	0.089	-	0.160	-	0.6	-

Note: Data may not multiply across due to rounding. * Area applied is less than 0.5 percent.

⁽¹⁾ Bearing acres in 2005 in Washington were 158,000 acres and bearing acres in 2007 in Washington were 155,000 acres. Insufficient reports to publish data for the following agricultural chemicals. **2005: Herbicides:** 2,4-D, 2,4-D, dieth. sal, Alachlor, Atrazine, Cycloate, Dichlobenil, Flumioxazin, Glyphosate, Hexazinone, Isoxaben, MSMA, Napropamide, Picloram, K salt., **Insecticides:** Aluminum phosphide, Boric acid, Bt. (Berliner), Buprofezin, Clothianidin, Dimethoate, Disulfoton, Esfenvalerate, Ethyl parathion, Indoxacarb, Malathion, Methidathion, Methomyl, Methyl bromide, Methyl parathion, Neem oil, clar. hyd., Oxamyl, Permethrin, Petroleum oil, Piperonyl butoxide, Propargite, Pyrethrins. **Fungicides:** Bacillus subtilis, Basic copper sulfate, Benomyl, Butanone, Chlorothalonil, Copper sulfate, Cyprodinil, Dinocap, Dodine, Fenbuconazole, Ferbam, Metiram, Pyrimethanil, Quintec, Streptomycin sulfate, Tebuconazole, Trichoderma harz. Vinclozolin. **Other Chemicals:** Chlorophacinone, Chloropicrin, DNOC, Dichloropropene, Diphacinone, E-8-Dodecenyl acetat, Hexadecenal, Hexadecenyl acetate, Mepiquat pentaborate, Metam-sodium, Methyl anthranilate, Mineral oil, Monocarbamide dihyd., Spirodiclofen, Strychnine, Tetradecen-1-OL (Z), Tridecen-1-YL-Acetate, Tridecenyl acetate, Z-8-Dodecanol, Z-8-Dodecen acetate. **2007: Herbicides:** Diuron, Glufosinate-ammonium, Glyphosate amm. salt, Nicosulfuron, Oxyfluorfen, Pendimethalin, Pronomide, Sethoxydim, Trifluralin. **Insecticides:** Abamectin, Beauveria bassiana, Bifenazate, Bifenthrin, Bt subsp israelensis, Buprofezin, Clofentezine, Ethion, Etoxazole, Fenbutatin-oxide, Fenpyroximate, Fonicamid, Flucythrinate, Formetanate hydro., Methidathion, Oxtacide-264, Petroleum oil, Phorate, Piperonyl butoxide, Potassium salts, Propargite, Pyrethrins, Thiamethoxam. **Fungicides:** Basic copper sulfate, Butanone, Captan, Copper hydroxide, Copper octanoate, Copper oxide, Cyprodinil, Dodine, Fosetyl-al. **Other Chemicals:** Strychnine, Zinc phosphide.

⁽²⁾ Total applied is less than 50 pounds.

⁽³⁾ Rates and total applied are not available because amounts of active ingredients are not comparable between products.

⁽⁴⁾ Rate per acre is less than 0.0005 lbs.

Apples: Agricultural Chemical Applications, Program States, 2005 and 2007⁽¹⁾

Active Ingredient	Area Applied		Applications		Rate Per Application		Rate Per Crop Year		Total Applied	
	2005	2007	2005	2007	2005	2007	2005	2007	2005	2007
Herbicides:	Percent		Number		Pounds Per Acre				1,000 Lbs.	
2, 4-D	-	1	-	1.2	-	0.454	-	0.523	-	1.0
2,4-D, BEE	1	-	1.0	-	0.338	-	0.338	-	0.9	-
2,4-D, dieth. sal	1	-	1.2	-	0.675	-	0.810	-	3.2	-
2, 4-D, dimeth. salt	11	8	1.3	1.3	0.838	0.977	1.062	1.280	37.1	29.7
Carfentrazone-ethyl	1	1	1.1	1.2	0.020	0.026	0.022	0.031	(²)	0.1
Diuron	6	6	1.2	1.1	1.363	1.484	1.626	1.688	29.4	31.0
Flumioxazin	-	*	-	1.1	-	0.232	-	0.245	-	0.3
Glufosinate-ammonium	1	1	1.2	1.9	0.662	0.743	0.774	1.422	2.8	4.0
Glyphosate iso. salt	33	45	1.6	1.6	0.938	1.193	1.499	1.925	153.4	250.5
Norflurazon	6	5	1.5	1.4	1.943	1.575	2.845	2.186	54.0	28.5
Oryzalin	1	2	1.2	1.0	2.555	2.099	3.036	2.098	10.2	11.0
Oxyfluorfen	3	1	1.1	1.0	0.731	1.121	0.813	1.126	6.4	3.6
Paraquat	14	12	1.2	1.2	0.717	1.194	0.881	1.440	39.0	49.7
Pendimethalin	1	3	1.0	1.4	1.569	1.443	1.579	2.055	2.6	16.9
Simazine	10	10	1.2	1.3	1.477	1.421	1.775	1.843	55.2	52.1
Sulfosate	3	-	1.3	-	1.396	-	1.810	-	17.3	-
Terbacil	3	1	1.1	1.0	0.519	0.826	0.575	0.826	4.7	2.0
Insecticides:										
Abamectin	4	2	1.3	1.2	0.013	0.01	0.017	0.012	0.2	0.1
Acetamiprid	31	37	1.4	1.7	0.111	0.147	0.153	0.254	14.4	27.0
Aluminum phosphide	1	-	2.0	-	0.706	-	1.396	-	5.1	-
Azadirachtin	-	*	-	2.8	-	0.021	-	0.059	-	(²)
Azinphos-methyl	63	62	2.4	2.5	0.784	0.832	1.875	2.045	363.0	363.3
Benzoic acid	27	19	1.5	1.4	0.199	0.197	0.305	0.273	25.7	15.2
Beta-cyfluthrin	-	*	-	1.3	-	0.018	-	0.023	-	(²)
Bifenazate	4	1	1.1	1.0	0.433	0.449	0.459	0.449	6.1	1.3
Bt subsp. Kurstaki (³)	16	10	1.6	1.8	(⁴)	-	(⁴)	-	(²)	-
Bt (Bacillus thur.)	-	-	-	-	-	(³)	-	(³)	-	(³)
Carbaryl	55	52	1.4	1.4	1.206	1.115	1.723	1.566	292.1	233.8
Chlorpyrifos	50	59	1.2	1.2	1.483	1.502	1.728	1.732	264.2	292.2
Clofentezine	6	1	1.1	1.0	0.161	0.207	0.170	0.208	3.1	0.6
Cvd-X-Granulo. Viru. (³)	9	10	1.8	2.6	-	-	-	-	-	-
Cyfluthrin	-	1	-	1.1	-	0.032	-	0.034	-	0.1
Diazinon	6	8	1.8	1.4	0.889	1.504	1.601	2.078	27.1	50.1
Dimethoate	1	*	1.5	1.6	0.640	1.132	0.946	1.854	3.8	1.8
Emamectin benzoate	-	16	-	1.2	-	0.013	-	0.016	-	0.7
Endosulfan	11	9	1.2	1.2	1.411	1.458	1.705	1.723	58.7	43.3
Esfenvalerate	11	10	1.6	1.5	0.038	0.044	0.060	0.069	2.1	1.9
Ethion	-	*	-	1.9	-	0.220	-	0.413	-	0.4
Etoxazole	10	3	1.3	1.0	0.078	0.085	0.098	0.088	3.0	0.7
Fenbutatin-oxide	2	-	1.1	-	0.739	-	0.786	-	4.2	-
Fenpropathrin	15	12	1.9	1.6	0.212	0.258	0.412	0.402	18.4	14.3
Fenpyroximate	3	7	1.0	1.1	0.067	0.086	0.069	0.091	0.6	1.9
Fonicamid	-	*	-	1.6	-	0.086	-	0.139	-	0.2
Formetanate hydro.	10	3	1.1	1.0	0.719	0.766	0.769	0.766	23.7	6.7
Gamma-cyhalothrin	14	5	2.3	2.0	(⁴)	0.015	(⁴)	0.030	(²)	0.4
Hexythiazox	4	3	1.0	1.1	0.126	0.125	0.127	0.133	1.6	1.0
Imidacloprid	29	25	1.5	1.5	0.053	0.086	0.079	0.128	6.9	9.3
Indoxacarb	6	4	1.3	1.4	0.091	0.090	0.119	0.129	2.2	1.3
Kaolin	8	3	1.3	2.3	31.912	33.500	42.259	75.830	1,058.5	593.3
Lambda-cyhalothrin	8	10	1.6	1.5	0.043	0.031	0.068	0.048	1.7	1.4
Malathion	*	*	2.8	1.5	0.682	2.695	1.937	4.172	0.9	1.2
Methidathion	1	-	1.4	-	0.804	-	1.104	-	2.1	-
Methomyl	5	4	1.8	1.8	0.598	0.526	1.104	0.943	16.0	9.5
Methoxychlor	*	-	2.9	-	0.462	-	1.354	-	1.7	-
Novaluron	18	15	1.9	1.5	0.119	0.163	0.229	0.238	12.7	10.6
Oxamyl	1	*	2.2	1.3	0.300	0.211	0.673	0.269	1.9	0.2
Permethrin	3	1	1.2	1.4	0.174	0.170	0.215	0.242	2.1	1.0
Petroleum distillate	53	58	2.0	1.8	14.497	17.808	29.422	31.410	4,736.0	5,281.8
Petroleum oil	2	4	1.9	1.5	8.471	14.180	15.687	20.719	83.9	262.0
Phosmet	33	25	2.4	2.2	1.558	1.609	3.695	3.561	372.8	255.0
Pyrethrins	*	*	1.2	1.1	0.010	0.128	0.012	0.147	(²)	0.1
Pyridaben	16	7	1.3	1.1	0.234	0.248	0.300	0.262	14.4	5.6
Pyriproxyfen	7	2	1.1	1.0	0.096	0.098	0.105	0.099	2.3	0.5
Spinosad	39	24	1.3	1.4	0.109	0.104	0.142	0.146	17.0	10.1
Thiacloprid	10	8	1.8	1.5	0.121	0.167	0.220	0.258	7.0	5.7
Thiamethoxam	3	8	1.1	1.0	0.070	0.121	0.074	0.126	0.6	2.8

See footnotes at end of table (next page).

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Apples: Agricultural Chemical Applications, Program States, 2005 and 2007⁽¹⁾ (cont.)

Active Ingredient	Area Applied		Applications		Rate Per Application		Rate Per Crop Year		Total Applied	
	2005	2007	2005	2007	2005	2007	2005	2007	2005	2007
Fungicides:	Percent		Number		Pounds Per Acre				1,000 Lbs.	
Bacillus pumilus ⁽³⁾	2	4	1.6	2.5	-	-	-	-	⁽²⁾	-
Bacillus subtilus ⁽³⁾	1	1	1.2	1.3	-	-	-	-	-	-
Basic copper sulfate	3	3	1.1	1.2	0.865	1.239	0.970	1.523	10.1	13.3
Benomyl	1	-	1.2	-	0.614	-	0.742	-	3.4	-
Boscalid	12	14	1.1	1.4	0.015	0.014	0.016	0.020	0.6	0.8
Butanone	2	-	2.3	-	0.066	-	0.150	-	0.7	-
Calcium polysulfide	22	18	1.4	1.5	17.466	16.190	24.653	23.579	1,666.6	1,223.6
Captan	34	34	5.3	5.2	1.683	1.988	8.879	10.274	923.1	1,005.5
Chlorothalonil	*	*	1.3	1.2	1.399	1.303	1.761	1.537	2.3	1.2
Copper hydroxide	17	7	1.1	1.3	2.169	2.617	2.424	3.361	127.9	66.8
Copper oxide	*	1	2.5	1.0	2.485	3.777	6.218	3.963	8.5	8.6
Copper oxychloro. sul.	8	2	1.0	1.5	2.590	1.529	2.663	2.264	63.6	13.3
Copper oxychloride	6	2	1.1	1.0	2.425	2.526	2.619	2.626	50.1	13.3
Copper resinate	1	-	1.1	-	0.221	-	0.238	-	0.9	-
Copper sulfate	1	2	1.0	1.6	1.089	0.789	1.139	1.257	3.9	6.0
Cyprodinil	3	4	1.5	1.5	0.122	0.183	0.186	0.276	1.7	3.4
Dodine	2	3	1.6	1.5	1.026	0.800	1.681	1.223	9.4	9.4
Fenarimol	16	13	1.5	1.4	0.064	0.067	0.093	0.091	4.6	3.5
Fenbuconazole	*	*	1.9	1.7	0.058	0.061	0.110	0.103	⁽²⁾	0.1
Fosetyl-al	3	1	1.1	1.0	2.472	2.443	2.718	2.456	22.5	7.2
Kresoxim-methyl	16	13	2.0	1.7	0.105	0.111	0.214	0.190	10.8	7.0
Mancozeb	40	37	3.2	2.7	2.488	2.676	7.999	7.309	991.0	769.8
Maneb	1	-	1.8	-	2.404	-	4.279	-	14.8	-
Mefenoxam	*	-	1.1	-	0.453	-	0.478	-	0.5	-
Metiram	11	7	3.3	3.1	2.510	2.586	8.296	8.078	291.4	172.7
Myclobutanil	43	36	1.7	1.5	0.109	0.128	0.187	0.191	24.8	19.5
Oxytetracycline	16	7	1.2	1.2	0.186	0.171	0.224	0.207	10.9	4.3
Potassium bicarbon.	1	1	1.2	1.2	2.125	2.397	2.465	2.798	11.3	9.2
Pseudomonas fluores.	3	-	1.3	-	0.267	-	0.336	-	3.3	-
Pyraclostrobin	12	14	1.1	1.4	0.001	0.001	0.001	0.001	⁽²⁾	⁽²⁾
Pyrimethanil	4	3	1.5	1.3	0.193	0.239	0.283	0.323	3.6	3.0
Streptomycin	14	9	2.0	1.6	0.148	0.173	0.299	0.273	13.0	6.7
Streptomycin sulfate	2	3	1.7	3.0	0.242	1.8	0.413	0.281	2.4	0.511
Sulfur	35	26	1.7	2.2	5.652	6.290	9.790	13.630	1,038.0	1,034.1
Thiophanate-methyl	23	18	3.2	2.5	0.376	0.375	1.190	0.939	84.7	49.8
Thiram	5	*	2.9	2.6	1.916	4.592	5.561	11.709	88.0	5.6
Triadimefon	5	4	1.5	1.6	0.157	0.131	0.241	0.207	3.7	2.6
Trifloxystrobin	30	20	1.6	1.6	0.060	0.066	0.098	0.103	8.9	6.0
Triflumizole	36	21	1.5	1.7	0.284	0.276	0.414	0.465	45.1	27.9
Ziram	15	11	2.3	2.0	2.615	3.009	5.893	6.100	267.4	195.7

See footnotes at end of table (next page).

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Apples: Agricultural Chemical Applications, Program States, 2005 and 2007⁽¹⁾ (cont.)

Active Ingredient	Area Applied		Applications		Rate Per Application		Rate Per Crop Year		Total Applied	
	2005	2007	2005	2007	2005	2007	2005	2007	2005	2007
	Percent		Number		Pounds Per Acre				1,000 Lbs.	
Other Chemicals:										
Acequinocyl	2	-	1.0	-	0.243	-	0.250	-	1.8	-
Benzyladenine	19	23	1.1	1.3	0.041	0.034	0.046	0.043	2.7	2.9
Butenoic Acid Hydro.	9	15	1.0	1.1	0.078	0.071	0.081	0.075	2.2	3.3
Chlorophacinone	*	2	1.7	1.1	0.001	⁽⁴⁾	0.001	⁽⁴⁾	⁽²⁾	⁽²⁾
Cytokinins	-	1	-	1.6	-	⁽⁴⁾	-	⁽⁴⁾	-	⁽²⁾
Dodecadien-1-ol	4	2	1.3	1.3	0.174	0.012	0.225	0.016	2.5	0.1
Dodecanol	1	1	1.1	1.2	0.014	0.004	0.017	0.004	0.1	⁽²⁾
Ethephon	22	13	1.3	1.3	0.544	0.485	0.686	0.615	45.5	23.3
Gibberellic acid	2	3	1.3	1.8	0.018	0.026	0.023	0.048	0.1	0.4
Gibberellins A4A7	14	18	1.1	1.0	0.026	0.024	0.029	0.024	1.3	1.2
Mineral oil	-	1	-	2.1	-	19.794	-	40.951	-	113.0
NAA	29	12	1.3	1.7	0.023	0.020	0.030	0.033	2.7	1.1
NAA, Potassium salt	17	4	1.1	1.2	0.025	0.036	0.027	0.045	1.4	0.5
NAA, Sodium	-	11	-	1.4	-	0.012	-	0.017	-	0.5
NAD	8	4	1.1	1.0	0.046	0.058	0.049	0.058	1.1	0.7
Octadecadien (E,Z)	13	*	1.0	1.0	0.388	0.001	0.403	0.001	16.0	⁽²⁾
Octadecadien (Z,Z)	13	*	1.0	1.0	5.430	0.017	5.640	0.017	223.7	⁽²⁾
Prohexadione calcium	16	6	1.3	2.0	0.198	0.213	0.259	0.422	12.3	7.4
Spirodiclofen	2	7	1.0	1.2	0.243	0.208	0.246	0.239	1.6	4.8
Tetradecanol	1	1	1.1	1.2	0.003	0.001	0.003	0.001	⁽²⁾	⁽²⁾
Tetradecen-1-OL (Z)	1	-	1.3	-	0.089	-	0.119	-	0.2	-
Warfarin	-	*	-	1.0	-	0.006	-	0.006	-	⁽²⁾
Zinc phosphide	3	2	1.4	1.4	0.118	0.117	0.161	0.159	1.6	1.0

Note: Data may not multiply across due to rounding. * Area applied is less than 0.5 percent.

⁽¹⁾ Bearing acres in 2005 for the eight major states were 306,400 acres. States included were CA, MI, NY, NC, OR, PA, WA, & WI. Bearing acres in 2007 for the seven major states were 288,000 acres. States included were CA, MI, NY, NC, OR, PA, & WA. Applications of some active ingredients may refer only to nonbearing acres. Insufficient reports to publish data for the following agricultural chemicals. **2005: Herbicides:** 2,4-D, Alachlor, Atrazine, Cycloate, Dichlobenil, Diquat dibromide, Fenoxaprop-p-ethyl, Flumioxazin, Glyphosate, Glyphosate amm. salt, Hexazinone, Isoxaben, MSMA, Napropamide, Picloram, K salt, Rimsulfuron, Sethoxydim, Thifensulfuron, Trifluralin. **Insecticides:** Acephate, Azadirachtin, Bifenthrin, Boric acid, Bt. (Berliner), Buprofezin, Canola oil, Clothianidin, Cyfluthrin, Deltamethrin, Diflubenzuron, Disulfoton, Ethyl parathion, Fenamiphos, Methyl bromide, Methyl parathion, Naled, Neem oil, clar. hyd., Piperonyl butoxide, Potassium salts, Propargite, Rotenone, Tebufenozide. **Fungicides:** Azoxystrobin, Borax Decahydrate, Copper amm. complex, Copper chloride hyd., Dinocap, Ferbam, Fludioxonil, PCNB, Phosphorous acid, Potassium Phosphate, Propiconazole, Quintec, Tebuconazole, Trichoderma harz., Vinclozolin. **Other Chemicals:** Capsaicin, Chloropicrin, Cytokinins, DNOC, Dichloropropene, Diphacinone, E-8-Dodecenyl acetat, Harpin protein, Hexadecenal, Hexadecenyl acetate, Hydrogen peroxide, Mepiquat pentaborate, Metaldehyde, Metam-sodium, Methyl anthranilate, Mineral oil, Monocarbamide dihyd., Strychnine, Tetradecen-1-YL (E), Tridecen-1-yl-Acetate, Z-8-Dodecanol, Z-8-Dodecen acetate. **2007: Herbicides:** 2,4-D, dieth. salt, Atrazine, Dichlobenil, Glyphosate, Glyphosate amm. salt, Metolachlor, Nicosulfuron, Pronamide, Sethoxydim, Trifluralin. **Insecticides:** Beauveria bassiana, Bifenthrin, Bt subsp israelensis, Bt subsp aizawai, Bt. (Berliner), Buprofezin, Clothianidin, Deltamethrin, Dicofol, Fenbutatin-oxide, Flucythrinate, Lindane, Methidathion, Methoxychlor, Naled, Neem oil, clar. hyd, Ocatacide-264, Phorate, Piperonyl butoxide, Potassium salts, Propargite, Rotenone, Ryania, Silicon dioxide, Soybean oil, Trichlorfon. **Fungicides:** Benomyl, Butanone, Copper chloride hyd., Copper octanoate, Ferbam, Maneb, Mefenoxam, Metalaxyl. **Other Chemicals:** Strychnine, Tetradecen-1-OL (Z), Z-8-Dodecanol, Z-8-Dodecen acetate, Zinc phosphide.

⁽²⁾ Total applied is less than 50 pounds.

⁽³⁾ Rates per acre is less than 0.0005 lbs.

⁽⁴⁾ Rates and total applied are not available because amounts of active ingredient are not comparable between products.

